

SYMES

Appl. No. 09/960,728

April 10, 2006

AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 14 and 15 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) Apparatus for processing data, said apparatus comprising:

- (i) a shifting circuit;
- (ii) a bit portion selecting and combining circuit; and

(iii) an instruction decoder, responsive to ~~a single instruction multiple data~~an instruction to control said shifting circuit and said bit portion selecting and combining circuit, for performing an operation upon a data word R_n and a data word R_m , wherein said operation yields a value given by:

(a) selecting a first portion of bit length A of said data word R_n extending from one end of said data word R_n ;

(b) selecting a second portion of bit length B of said data word R_m subject to an arithmetic right shift by a right-shift amount specified as a shift operand within said single-instruction multiple-data instruction, said right-shift amount being independent of said bit length A of said first portion; and

(c) combining said first portion and said second portion to form respective different bit position portions of an output data word R_d .

2. (original) Apparatus as claimed in claim 1, wherein said first portion extends from a most significant bit end of said data word R_n .

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3. (original) Apparatus as claimed in claim 1, wherein said first portion extends from a least significant bit end of said data word R_n .

4. (previously presented) Apparatus as claimed in claim 1, wherein said shift operand can specify a number of bit-positions representing an amount of arithmetic right shift to apply to said data word R_n .

5. (original) Apparatus as claimed in claim 1, wherein said first portion and said second portion abut within said output data word R_d .

6. (original) Apparatus as claimed in claim 5, wherein said output data word has a bit length of C and $C = A + B$.

7. (original) Apparatus as claimed in claim 6, wherein $A = B$.

8. (original) Apparatus as claimed in claim 1, wherein $A = 16$.

9. (original) Apparatus as claimed in claim 1, wherein $B = 16$.

10. (cancelled).

11. (original) Apparatus as claimed in claim 1, wherein said instruction combines a data value pack operation with a shift operation.

12. (original) Apparatus as claimed in claim 1, wherein said shifting circuit is upstream of said selecting and combining circuit in a data path of said apparatus.

13. (original) Apparatus as claimed in claim 12, wherein said selecting and combining circuit is disposed in parallel to an arithmetic circuit within said data path.

14. (currently amended) A method of data processing, said method comprising the steps of decoding and executing a ~~single instruction multiple data~~ an instruction by performing an operation on a data word Rn and a data word Rm, wherein said operation yields a value given by:

(i) selecting a first portion of bit length A of said data word Rn extending from one end of said data word Rn;

(ii) selecting a second portion of bit length B of said data word Rm subject to an arithmetic right shift by a right-shift amount specified as a shift operand within said single-instruction multiple-data instruction, said right-shift amount being independent of said bit length A of said first portion; and

(iii) combining said first portion and said second portion to form respective different bit position portions of an output data word Rd.

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15. (currently amended) A computer program provided on a computer-readable medium, said computer program for controlling a computer to perform the steps of decoding and ~~executing a single instruction multiple data~~an instruction for performing an operation upon a data word Rn and a data word Rm, wherein said ~~operation~~operation yields a value given by:

- (i) selecting a first portion of bit length A of said data word Rn extending from one end of said data word Rn;
- (ii) selecting a second portion of bit length B of said data word Rm subject to an arithmetic right shift by a right-shift amount specified as a shift operand within said ~~single instruction multiple data~~ instruction, said right-shift amount being independent of said bit length A of said first portion; and
- (iii) combining said first portion and said second portion to form respective different bit position portions of an output data word Rd.